

PATENT
Application 10/667,060
Attorney Docket 2002P15893US01 (1009-175)

AMENDMENTS

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:
reassigning resources in a soft programmable logic controller (PLC), said soft PLC comprised by a single computer, said reassigning comprising the steps of:
selecting a first interface in a first operating environment of the soft PLC;
selecting a virtual slot in a second operating environment of the soft PLC for installation of the first interface;
creating a first installation file in the first operating environment for installation of the first interface in the second operating environment; and
installing the first interface in the second operating environment using the first installation file to reassign a resource between the first operating environment and the second operating environment, an interrupt line of the reassigned resource shared in the second operating ~~system-environment~~ with at least one real-time card.
2. (Previously Presented) The method of claim 1, wherein the first operating environment is a non-real time operating environment and the second operating environment is a real-time operating environment.
3. (Previously Presented) The method of claim 1, wherein the second operating environment is a non-real time operating environment and the first operating environment is a real-time operating environment.
4. (Previously Presented) The method of claim 1, wherein the first operating environment is a non-deterministic operating environment wherein scan cycles are variable, and the second operating environment is a deterministic operating environment wherein scan cycles are non-variable.
5. (Original) The method of claim 1, wherein the installing step includes installing a real-time device driver.

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6. (Previously Presented) The method of claim 1, wherein the installing step overrides an installation of a device driver associated with the first operating environment.
7. (Previously Presented) The method of claim 1, during the creating step, installation parameters are obtained from the first operating environment and used in the creation of the first installation file.
8. (Previously Presented) The method of claim 1, further comprising deleting the first installation file.
9. (Original) The method of claim 1, further comprising uninstalling the resource from a device driver associated with the first operating environment.
10. (Original) The method of claim 1, further comprising enabling interrupt sharing for the reassigned resource so that an interrupt may be used for more than one resource.
11. (Previously Presented) The method of claim 1, further comprising the steps of:
 - displaying the resource for reassignment; and
 - selecting an empty interface slot in the second operating environment to receive the resource, the resource being one of a second interface, a card, a device and a port.
12. (Previously Presented) The method of claim 1, further comprising modifying installation parameters to specify a second installation file for a real-time driver.
13. (Currently Amended) The method of claim 1, further comprising updating a registry associated with the second operating environment to reflect a said reassignment of the resource.
14. (Currently Amended) A method comprising:
 - automatically reassigning resources in a soft programmable logic controller (PLC)

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comprised by a single computer, said automatically reassigning comprising the steps of:

- identifying a resource to be reassigned from a first processing mode of the soft PLC to a second processing mode of the soft PLC;
- removing the resource from operation in the first processing mode;
- creating an installation file containing information of at least one device driver;
- assigning the resource for operation in the second processing mode by using installation parameters associated with the first processing mode, an interrupt line of the assigned resource shared in the second ~~operating system processing mode~~ with at least one real-time card; and
- automatically installing the at least one device driver for the resource in the second processing mode using the information from the installation file so that any device in communication with the at least one device driver is functional.

15. (Previously Presented) The method of claim 14, wherein the removing step includes removing the resource from a non-real-time processing mode and the assigning step reassigns a card associated with the resource for operation in a real-time operating mode adapted to achieve real-time processing.
16. (Original) The method of claim 14, further comprising updating a registry associated with the second processing mode to reflect a reassignment of the resource.
17. (Original) The method of claim 14, wherein in the assigning step includes associating the assigned resource with a software component instance.
18. (Original) The method of claim 14, further comprising modifying installation parameters to specify the installation file.
19. (Original) The method of claim 14, further comprising displaying available resources for reassignment from the first processing mode to the second processing mode and selecting one of the displayed available resources for reassignment.

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20. (Original) The method of claim 19, including building a list of available drivers for the selected resource.
21. (Original) The method of claim 14, in any step, the resource being one of a card, a port, an interface, and a device.
22. (Currently Amended) A system comprising:
- a soft programmable logic controller (PLC) comprised by a single computer;
 - a means for selecting a first interface in a first operating environment of the soft PLC;
 - a means for selecting a virtual slot in a second operating environment of the soft PLC for installation of the first interface;
 - a means for creating an installation file in the first operating environment of the soft PLC for installation of the first interface in the second operating environment of the soft PLC;
 - a means for installing the first interface in the second operating environment of the soft PLC using the installation file to reassign a resource between the first operating environment of the soft PLC and the second operating environment of the soft PLC, said system adapted to utilize said resource in the soft programmable logic controller (PLC), an interrupt line of the reassigned resource shared in the second operating ~~system environment~~ with at least one real-time card.
23. (Original) The system of claim 22, further comprising a means for reassigning the resource to a real-time operating environment.
24. (Original) The system of claim 22, further comprising a means for installing a real-time device driver.
25. (Original) The system of claim 24, wherein the means for installing a real-time device

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driver overrides an installation of a device driver associated with the first operating environment.

26. (Original) The system of claim 22, wherein installation parameters are obtained from the first operating environment and used in the creation of the installation file.

27. (Original) The system of claim 22, further comprising a means for deleting the installation file.

28. (Original) The system of claim 22, further comprising a means for uninstalling the resource from a current device driver associated with the first operating environment.

29. (Original) The system of claim 22, further comprising a means for enabling interrupt sharing for the resource so that more than one resource shares an interrupt.

30. (Original) The system of claim 22, further comprising a means for updating a registry associated with the second operating environment to reflect a reassignment of the resource.

31. (Previously Presented) The method of claim 22, wherein the resource includes one of a port, a second interface, a device, and a card.

32. (Currently Amended) A computer program product comprising a computer usable medium having readable program code embodied in the medium, the computer program product includes:

a soft programmable logic controller (PLC) comprised by a single computer;

a first software component to select an interface in a first operating environment of the soft PLC;

a second software component to select a virtual slot in a second operating environment of the soft PLC for installation of the interface;

a third software component to create an installation file in the first operating environment of the soft PLC for installation of the interface in the second operating environment of the soft PLC;

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a fourth software component to install the interface in the second operating environment of the soft PLC using the installation file to reassign a resource between the first operating environment of the soft PLC and the second operating environment of the soft PLC, an interrupt line of the reassigned resource shared in the second operating ~~system~~ environment with at least one real-time card.